Appendix C

Alternatives Considered and Dismissed from Further Study

Initial Development

The first step in the alternatives development process was to establish the study purpose and needs (i.e., the transportation problems warranting identification of reasonable alternatives). Concurrently, the MaineDOT and the FHWA compiled an inventory of the natural, socioeconomic, and cultural resources of the study area (MaineDOT, 2003). Using this information, the MaineDOT and the FHWA, with assistance from the PAC and the public, identified a wide range of potential 1,000-foot-wide corridors for alternatives that appeared to satisfy the purpose and needs of the study and were practicable while avoiding and minimizing impacts to people and resources. The logical termini of the build alternatives were identified and defined to consist of (1) I-395 near Route 1A and (2) the portion of Route 9 in the study area.

In May 2001, the MaineDOT and the FHWA, with public and PAC assistance, identified potential corridors for alternatives using low-level, high-resolution aerial photography and mapping of the land use, social features, and natural resources of the study area.

Details of the alternatives identification, development, analysis, and screening process are available in the MaineDOT's *Transportation Improvement Strategies and Alternatives Analysis Technical Memorandum and U.S. Army Corps of Engineers Highway Methodology Phase I Submission,* October 2003. This publication is available on the MaineDOT website (www.maine.gov/mdot/major-planning-studies/major-planning-stds.php) and the study website on the "Stay Informed" page (www.i395-rt9-study.com).

The MaineDOT and the FHWA compiled and refined the suggested corridors into 45 alternatives. These initial 45 alternatives fit into the following four broad "families":

- **Family 1: The Upgrade Alternatives.** Widening and other improvements to Route 1A (from I-395 to Route 46) and Route 46 (from Route 1A to Route 9) approximately 10 miles long. Although one upgrade alternative was initially

The preliminary alternatives analysis and screening were performed in accordance with the USACE, New England Division's "The Highway Methodology Workbook" to identify and document potential impacts generated by construction of those alternatives (USACE, 1995). Potential impacts were based on the limits of cut and fill necessary to construct, operate, and maintain a four-lane highway with two travel lanes in each direction and a divided median within an approximate 250-foot-wide right-of-way. The preliminary alternatives analysis quantified impacts to the following:

- wetlands
- hydric soils (for the purposes of this analysis, hydric soils were assumed to be wetlands)
- surface waters and water crossings with the potential to support anadromous fish (i.e., saltwater fish that return to freshwater streams and rivers to spawn)
- wildlife habitat
- notable wildlife habitat (i.e., threatened and endangered species habitat, deer-wintering areas, Maine Natural Areas Program data, inland waterfowl and wading-bird habitat)
- surface impacts over significant groundwater aquifers
- surface impacts over high-yield aquifers
- floodplains
- community wells
- active farmland, prime farmland soils, and soils of statewide importance
- areas of potential hazardous waste
- commercial and residential areas
- other land (e.g., transportation, recreation, education)
- residential and commercial displacements
- residences within 500 and 1,000 feet
- archaeological areas
- historic resources listed on or potentially eligible for listing on the NRHP

considered, six upgrade and five partial-upgrade alternatives ultimately were considered.

- **Family 2: The Northern Alternatives.** Alternatives that began at the I-395/Route 1A interchange and generally proceeded in a northerly direction to connect with Route 9. These alternatives were five to 10 miles in length, depending on the distance on Route 9 used as part of the alternative. Twelve alternatives in this family were ultimately studied.
- **Family 3: The Central Alternatives.** Alternatives that began at or near the I-395/Route 1A interchange and generally proceeded north and east through the study area to Route 9 east of Route 46. These alternatives were seven to 11 miles in length, depending on the distance on Route 9 used as part of the alternative. Due to natural resources and an attempt to minimize the impact to them, these "central" alternatives merged in a common area in the center of the study area north of Mann Hill Road. The MaineDOT created a "match line" at that point, with the central alternatives branching to the east and west of it, creating components 3A through 3K; the components were then combined to form alternatives. The six components on the west side of the match line (i.e., 3A through 3F) matched the four components on the east side (i.e., 3G through 3J), which in turn connected to Route 9. One component, 3K, extended the central alternatives bypassing East Eddington to the north and connecting to Route 9 east of Route 46. Using

all possible combinations of the six western components, the four eastern components, and component 3K, 36 possible central alternatives were initially created. Five other alternatives (for a total of 41) in this family were ultimately developed by modifying some of the initial 36 alternatives.

- **Family 4: The Southern Alternatives.** Alternatives that began near the I-395/Route 1A interchange and that were south of Route 1A and east of Route 46. These alternatives paralleled Routes 1A and 46 and intersected Route 9 in East Eddington. These alternatives were approximately 11 miles in length. Four alternatives were identified and considered: 4A, 4B, 4C, and 4D.

The MaineDOT conceptually designed and refined alternatives within the 1,000-foot-wide corridors.

To reduce the number of alternatives identified and conceptually designed to a reasonable range, the MaineDOT and the FHWA sought to identify one alternative from each family to be studied in detail. The decision of whether to dismiss or retain alternatives for further analysis was based on their ability to satisfy the study purpose and needs, results of the preliminary impacts analysis, and consideration of overall engineering feasibility. If more than one alternative in each family fully satisfied the study purpose and needs and was practicable, the alternative was selected based on potential impacts to the features and resources Alternatives that were more environmentally damaging than others were dismissed from further consideration. Alternatives that were the least environmentally damaging were retained for further consideration.

The engineering feasibility of each alternative was considered as part of the preliminary alternatives analysis. In addition to the ability to satisfy the design criteria, the following were quantified for each alternative:

- length
- bridges (the number and total length of bridges)
- amount of cut, fill, and total earthwork required (in millions of cubic yards)
- deepest cut (in feet)
- deepest fill (in feet)
- number of roadway and railway crossings
- average grade (in percent)
- average curvature (in degrees)

In June 2001, the MaineDOT and the FHWA, using results of the preliminary impacts analysis, dismissed from further consideration 37 of the initial 45 alternatives. The MaineDOT and the FHWA retained the alternative from each family that was the least environmentally damaging to features and resources. In Family 3, the central alternatives, no single alternative clearly emerged as having the least impacts; therefore, the MaineDOT and the FHWA chose four that were least environmentally damaging relative to the other central alternatives.

The MaineDOT and the FHWA presented the results of the initial alternatives development and screening to attendees at their interagency coordination meetings on six occasions (section 4.1.2).

The following eight alternatives were retained after the initial screening (exhibit 2.2):

- No-Build Alternative
- Alternative 1-1
- Alternative 2B
- Alternative 3AI
- Alternative 3AIK
- Alternative 3EI
- Alternative 3EIK
- Alternative 4B

Continued Development and Screening

Following the initial screening from June 2001 through September 2003, members of the PAC, the city of Brewer, the towns of Holden and Eddington, and the public suggested potential additional alternatives and modifications of other alternatives. The MaineDOT and the FHWA continued to develop and screen the suggested alternatives along with the eight alternatives retained for further consideration. They presented screening results to the PAC and the public at 13 PAC meetings, one public meeting, and meetings with representatives of the city of Brewer and the towns of Holden and Eddington (section 4.3.1).

In June 2004, alternatives were identified and developed parallel to the utility easements with the Bangor Hydro-Electric Company transmission lines. This family of alternatives, which start with the number 5, began at or near the I-395/Route 1A interchange and largely paralleled the electric transmission lines in the city of Brewer and the towns of Holden and Eddington. This family of alternatives consisted of four alternatives approximately 11 miles long. These alternatives were believed to have fewer impacts to wetlands than Family 3 alternatives because the land use had already been disturbed through the construction of power lines.

The process of identifying, developing, and screening alternatives or modifying alternatives continued. In January 2008, the following seven alternatives were preliminarily identified for further consideration and development and detailed study (exhibit 2.3):

- No-Build Alternative
- Alternative 1-1
- Alternative 2B-2
- Alternative 3A-3EIK-1
- Alternative 3EIK-2
- Alternative 5A2E3K
- Alternative 5B2E3K

In 2008, the MaineDOT and the FHWA updated the inventory of natural, socioeconomic, and cultural resources in the study area (MaineDOT, 2008); revised the conceptual designs of the build alternatives; and performed additional scoping with the public and with federal and state regulatory and resource agencies (Chapter 4).

In a continuing effort to avoid and minimize adverse impacts, the conceptual design of the build alternatives retained at the conclusion of the preliminary development and screening process was reconsidered in light of the updated inventory of natural, socioeconomic, and cultural resources in the study area. Refinements to the locations and conceptual design of the build alternatives were made using information from the updated inventory of features.

Additional scoping with the public and with federal and state regulatory and resource agencies was performed in June 2008. Six "connectors" (i.e., a highway connecting to another highway) were identified, developed, and analyzed between the three westernmost build alternatives retained at the end of the preliminary development and screening process, resulting in three additional alternatives to be considered in detail.

Analysis of Connectors

In a continued effort to avoid and minimize adverse impacts in December 2008, six connectors between the three westernmost build alternatives were identified, conceptually designed, and analyzed at the beginning of the phase of considering alternatives in detail (exhibit 2.4). One connector for Alternative 5B2E3K was identified, conceptually designed, and analyzed. Five connectors between Alternatives 2B-2 and 5A2E3K were identified, conceptually designed, and analyzed, resulting in 12 additional alternatives that were considered. The connectors and the resultant alternatives were conceptually designed and analyzed to the same level of detail as the other build alternatives (exhibit 2.5).

For Alternative 5B2E3K, one connector was considered. It used the existing I-395 interchange with Route 1A and replaced the section of Alternative 5B2E3K between I-395 and Eastern Avenue. This connector would reduce impacts to wetlands and result in fewer displacements of commercial businesses and residences. After considering this connector, Alternative 5B2E3K was modified to create Alternative 5B2E3K-1. Alternative 5B2E3K was dismissed from further consideration because it was substantially more environmentally damaging to wetlands and more displacements of commercial businesses and residences than Alternative 5B2E3K-1.

Five connectors between Alternatives 2B-2 and 5A2E3K were identified and developed, resulting in 12 additional alternatives for consideration. Six of those alternatives resulted from connecting Alternative 2B-2 to Alternative 5A2E3K near I-395; the six others resulted from connecting Alternative 5A2E3K to Alternative 2B-2 near Route 9. The alternatives that resulted from connecting Alternative 2B-2 to Alternative 5A2E3K were more environmentally damaging to wetlands and more residential displacements than Alternatives 2B-2 and 5A2E3K and were dismissed from further consideration.

Of the six alternatives that resulted from connecting Alternative 5A2E3K to Alternative 2B-2, two were retained for further consideration because they resulted in comparable or less impact to wetlands and fewer residential displacements than Alternatives 2B-2 and 5A2E3K. These alternatives were named Alternative 5A2B-2 and Alternative 5A2E3K-2.

In May 2009, a meeting took place with the federal and state regulatory and resource agencies to review the range of alternatives being considered. It was agreed that Alternatives 1-1 and 3A-3EIK-1 should be dismissed from further consideration. Alternative 1-1 was dismissed from further consideration because it would not further the study's purpose related to the NHS or satisfy the system linkage need because it would not provide a high-speed, controlled-access connection between I-395 and Route 9. Alternative 1-1 would satisfy the USACE's basic purpose statement. Alternative 3A-3EIK-1 was dismissed from further consideration because it was more environmentally damaging than Alternative 3EIK-2.

Evaluation of Route 9

In December 2009, the system-linkage need and Route 9 were reexamined in greater detail. Specifically, Route 9 was reexamined to understand more fully if it could reasonably accommodate the future traffic volumes that were foreseeable within the next 20 years. The following factors were considered in examining Route 9 in greater detail:

- study purpose and the need for improved regional system linkage
- the geometry and capacity of Route 9
- existing and future traffic congestion (measured in terms of operating speeds and the volume of existing and future traffic compared to the capacity of the highway) and safety
- expectations and concerns of community leaders and the public
- origins and destinations of motorists
- areas of congestion
- system continuity

- land use and community features
- growth trends
- natural resources

After careful consideration of those factors, the MaineDOT determined that Route 9, with the exception of the sections approaching the intersection of Routes 9 and 46 where the posted speed limit is lower than other portions of Route 9, could reasonably accommodate future traffic volumes for the next 20 years without additional improvements beyond the existing right-of-way (exhibit 2.6).

Two alternatives – 2B-2 and 5A2B-2 – connect to Route 9 near the Eddington School approximately 4.2 miles to the west of Route 46. When these two alternatives were considered with a bypass of the intersection of Routes 9 and 46 similar to the other build alternatives, two additional build alternatives were created: 2B-2-K and 5A2B-2-K.

Continued Coordination with the Federal Cooperating Agencies

In September and December 2010, meetings with the federal cooperating agencies took place, the purpose of which was to solidify the range of alternatives to be considered in detail.

The MaineDOT continued its analysis of the Route 9/46 intersection and concluded that the build alternatives, including those that use portions of Route 9, would improve the quality of traffic flow at the intersection of Route 9/46 and other physically less intrusive improvements (e.g., adding turn lanes) could be made to the intersection that would further improve the quality of traffic flow at the intersection. For these reasons, the MaineDOT and the FHWA dismissed alternatives that bypassed the intersection of Route 9/46 to the north in favor of further consideration of alternatives that use Route 9.

The MaineDOT, the FHWA, and the federal cooperating agencies further considered the remaining build alternatives and concluded that although available and practicable, Alternatives 3EIK-2, 5A2E3K, 5A2E3K-2, and 5B2E3k-1 were more environmentally damaging than other build alternatives. Alternative 5B2B-2 was created.

Alternatives Retained for Further Consideration and Detailed Study

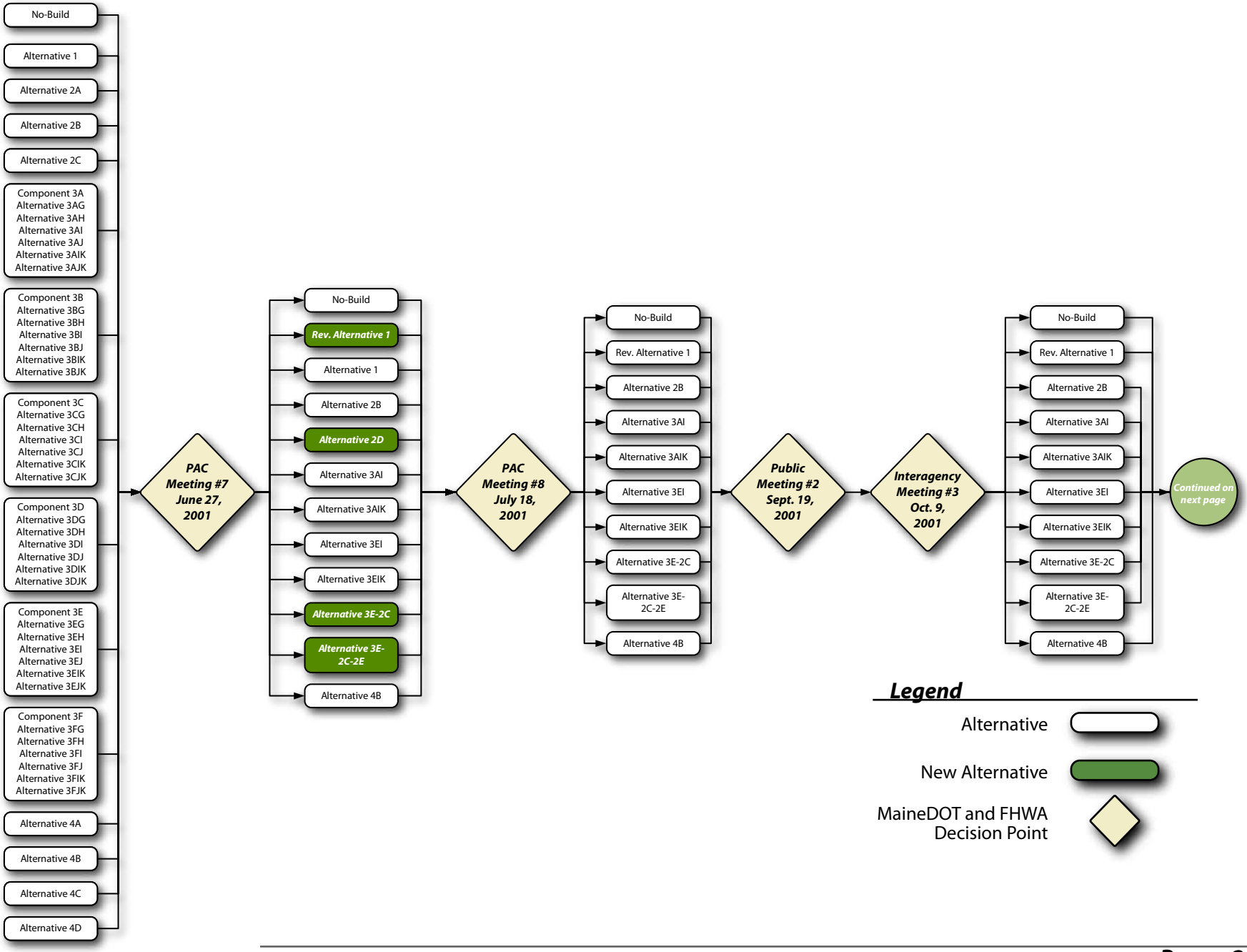
The following four alternatives were retained for further consideration and detailed study:

- No-Build Alternative
- Alternative 2B-2

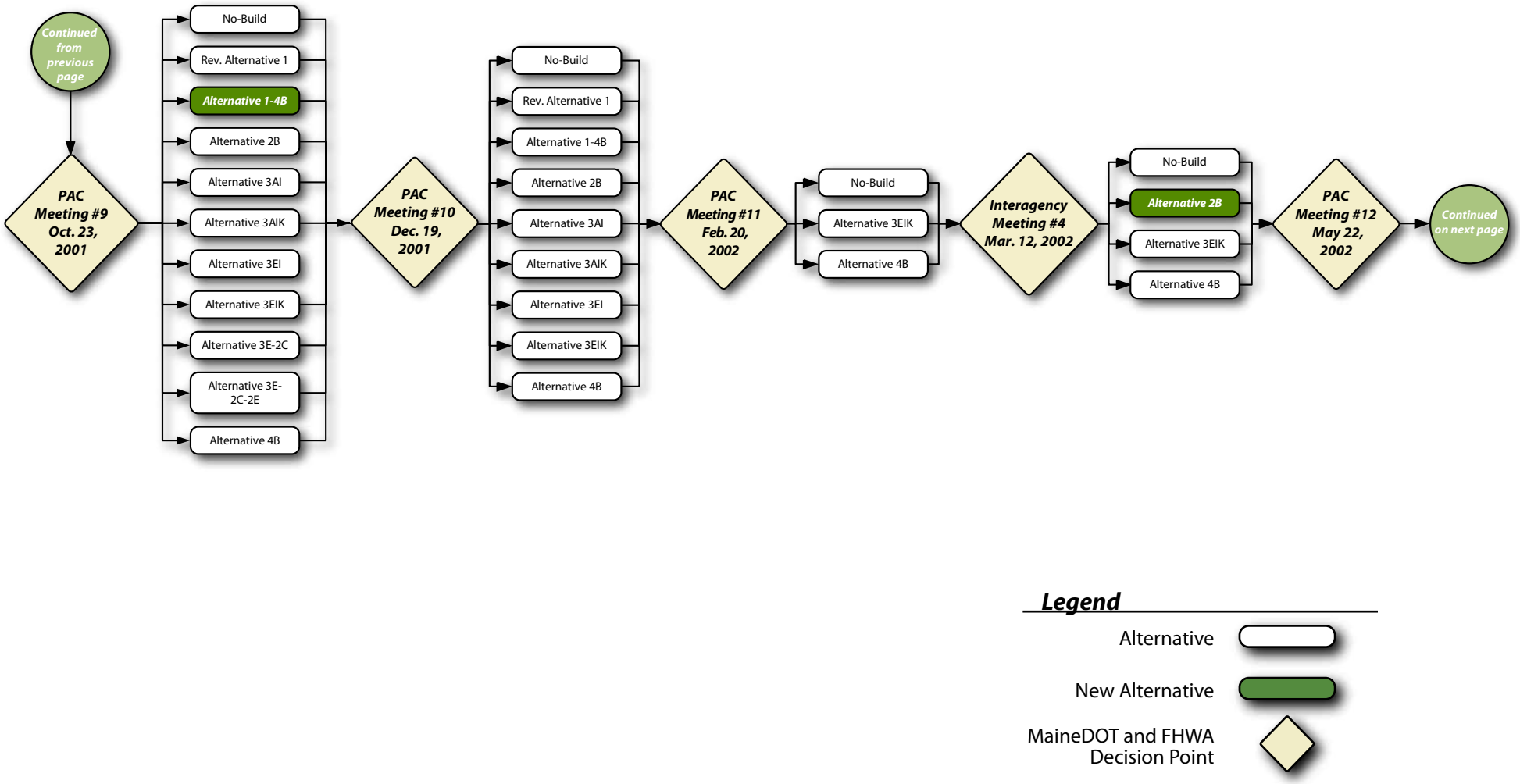
- Alternative 5A2B-2
- Alternative 5B2B-2

The cooperating agencies concurred with this range of alternatives to be retained for detailed analysis.

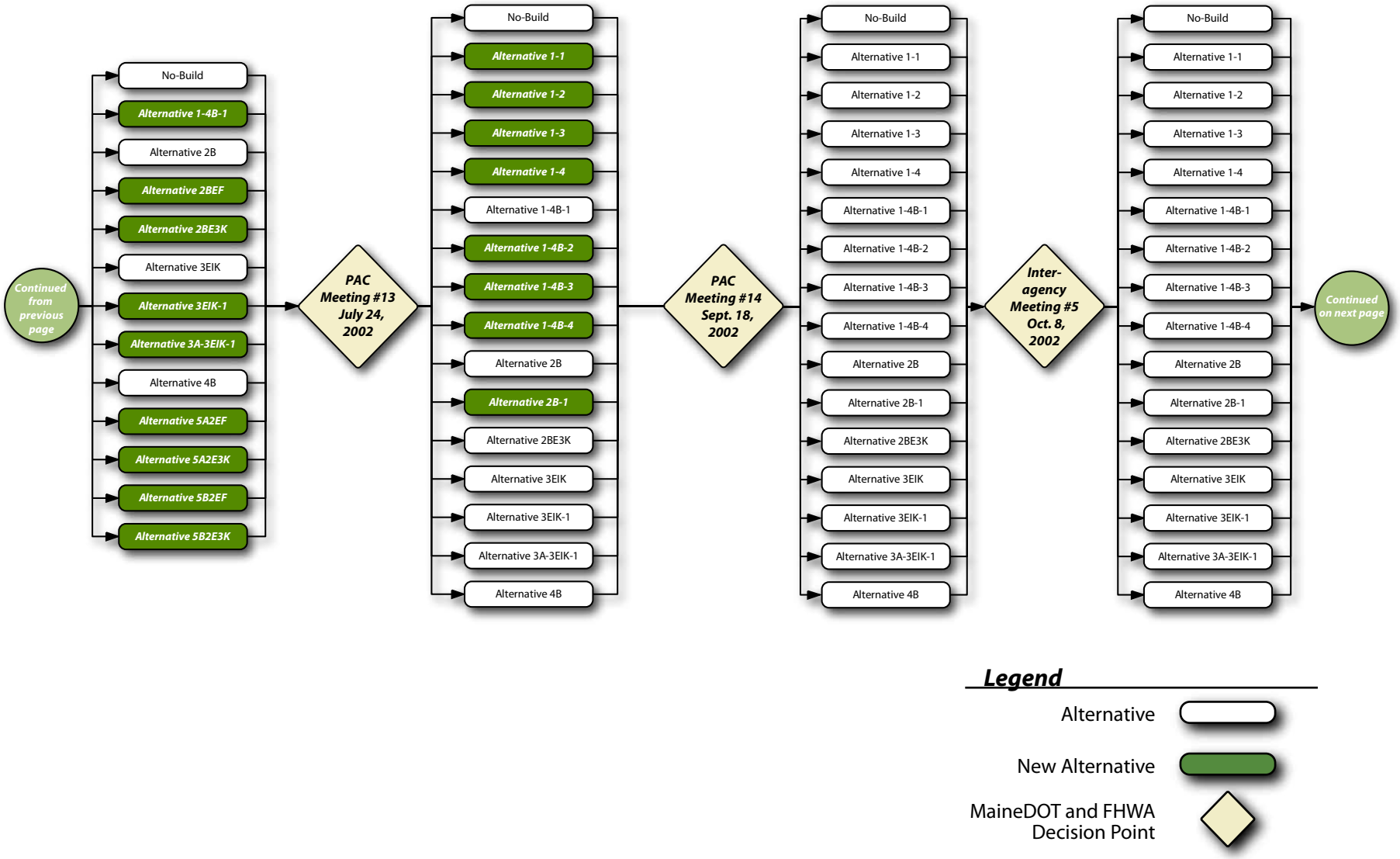
Alternatives Analysis Flow Diagram



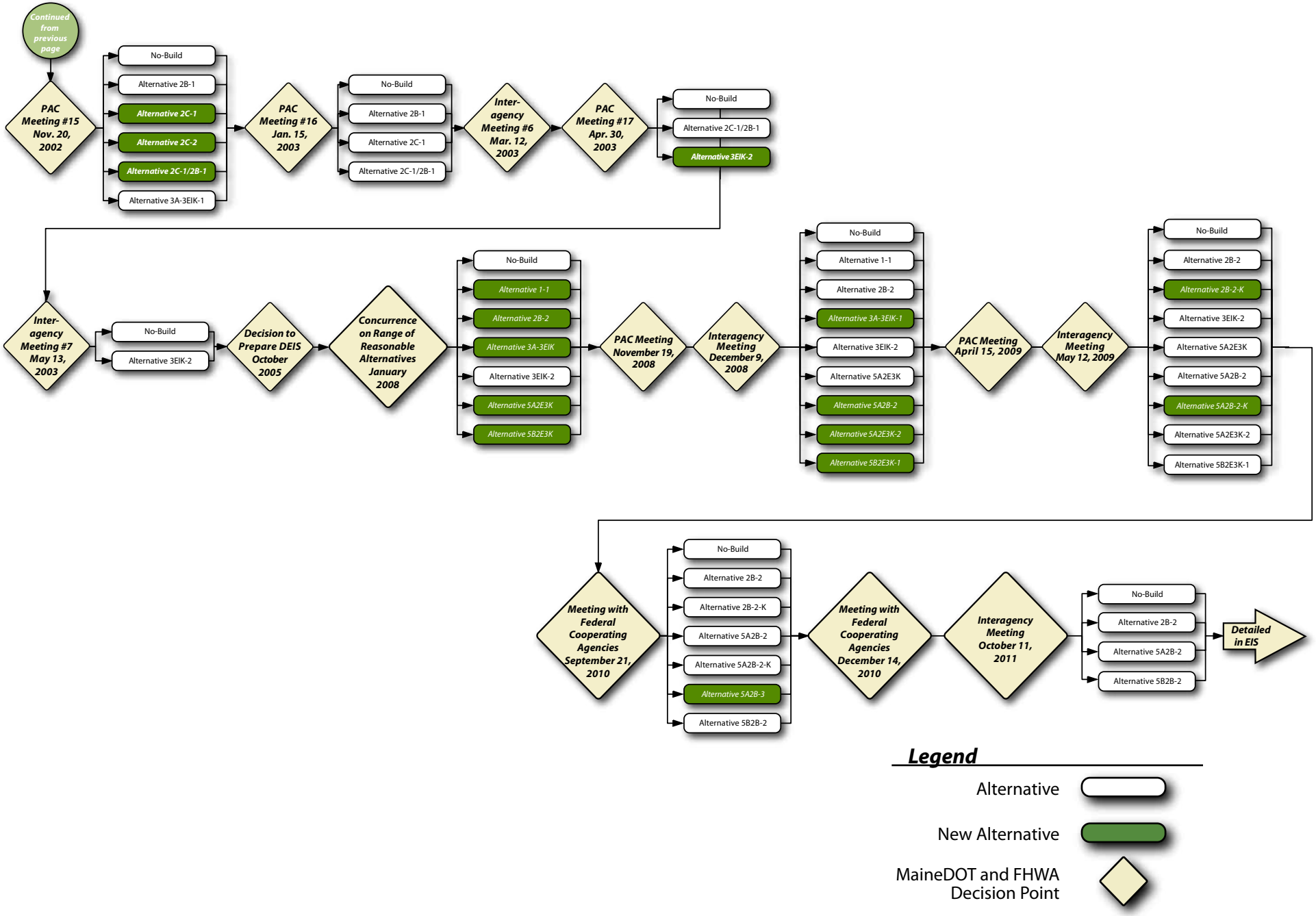
Alternatives Analysis Flow Diagram (continued)



Alternatives Analysis Flow Diagram (continued)



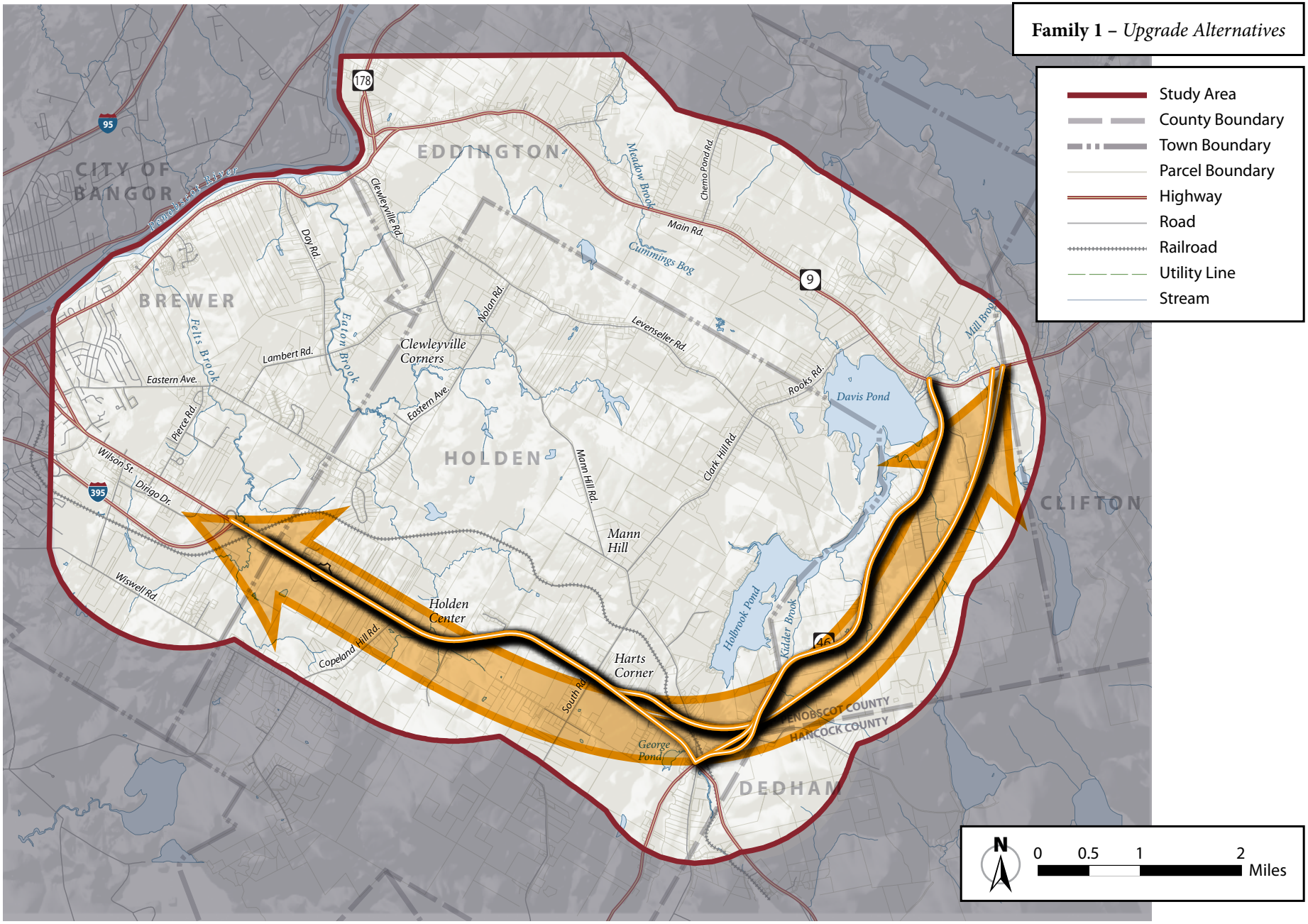
Alternatives Analysis Flow Diagram (continued)



No-Build Alternative

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
No-Build	• Does not satisfy design criteria • No construction or other measures to increase capacity or decrease demand	No	No	No	No	No	Yes	• **Retained for detailed study** • Although the No-Build Alternative satisfies neither the study purpose and needs nor the USACE's basic project purpose, it was retained for further consideration. The No-Build Alternative and its consequences, when fully developed, allow equal comparison to the build alternatives and help decision makers understand the consequences of taking no action.

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.


Family 1 – Upgrade Alternatives
Study Area
County Boundary
Town Boundary
Parcel Boundary
Highway
Road
Railroad
Utility Line
Stream
EDDINGTON
CITY OF BANGOR
BREWER
HOLDEN
CLIFTON
DEDHAM
Penobscot River
Meadow Brook
Chemo Pond Rd.
Main Rd.
Cummings Bog
Clewleyville Rd.
Day Rd.
Nolan Rd.
Levenseller Rd.
Mill Brook
Rooks Rd.
Davis Pond
Felts Brook
Eaton Brook
Lambert Rd.
Clewleyville Corners
Eastern Ave.
Pierce Rd.
Wilson St.
Dirigo Dr.
Mann Hill Rd.
Clark Hill Rd.
Mann Hill
Wiswell Rd.
Holden Center
Copeland Hill Rd.
Harts Corner
South Rd.
Holbrook Pond
Kidder Brook
George Pond
PENOBSCOT COUNTY
HANCOCK COUNTY
178
95
9
395
46
N
0
0.5
1
2
Miles

Family 1 – Upgrade Alternatives

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results and Impacts
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 1	• Does not satisfy design criteria • Length: 10.2 mi. of upgrading and widening Route 1A to create five through-lanes and Route 46 to create four through-lanes • Dual center left-turn lane on Route 1A • Bridge length: 1,300 ft. • Earthwork: 1.0 million cubic yards (mcy) (0.7 mcy cut, 0.3 mcy fill)	No	Yes	No	No	No	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 30 ac. • Stream crossings: 5 • Floodplain impacts: 1.5 ac. • Notable wildlife habitat: 0 ac. • Undeveloped habitat: 53 ac. • Prime farmland: 54.7 ac. • Residential displacements: 19
Revised Alternative 1	• Does not satisfy design criteria • Length: 10.2 mi. of upgrades and widening Route 1A and Route 46 to four through-lanes • No dual center left-turn lane on Route 1A • Bridge length: 1,313 ft. • Earthwork: 1.0 mcy (0.7 mcy cut, 0.3 mcy fill)	No	Yes	No	No	No	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 29 ac. • Stream crossings: 5 • Floodplain impacts: 1.4 ac. • Notable wildlife habitat: 0 ac. • Undeveloped habitat: 53 ac. • Prime farmland: 51.4 ac. • Residential displacements: 17
Alternative 1-1	• Does not satisfy design criteria • Length: 1.5 mi. of new alignment, 8.7 mi. of widening Route 1A and Route 46 to four lanes with eight at-grade intersections and pacer light system • Local roads created: 4.9 mi. of service roads for commercial/residential access • Bridge length: 685 ft. • Earthwork: 1.9 mcy (0.8 mcy cut, 1.1 mcy fill)	No	Yes	No	Yes	No	No	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 29 ac. • Stream crossings: 4 • Notable wildlife habitat: 0 ac. • Floodplain impacts: 1.0 ac. • Undeveloped habitat: 194 ac. • Prime farmland: 60.6 ac. • Residential displacements: 17 • Pacer light system determined to be ineffective tool for study-area climate and topography; town of Holden asked that its suggestion be removed from further consideration

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results and Impacts
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 1-2	• Does not satisfy design criteria • Length: 1.5 mi. of new alignment, 8.7 mi. of widening Route 1A and Route 46 to four lanes with four diamond interchanges • Local road created: 5.3 mi. of service roads for commercial/residential access • Bridge length: 1,210 ft. • Earthwork: 1.9 mcy (0.8 mcy cut, 1.1 mcy fill)	No	Yes	No	Yes	No	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 30 ac. • Stream crossings: 4 • Floodplain impacts: 1.0 ac. • Notable wildlife habitat: 2.2 ac. • Undeveloped habitat: 271 ac. • Prime farmland: 60.8 ac. • Residential displacements: 15
Alternative 1-3	• Does not satisfy design criteria • Length: 1.5 mi. of new alignment, 8.7 mi. of widening Route 1A and Route 46 to four lanes with seven right-in/ right-out connections to local roads • Local road created: 3.4 mi. of service roads for commercial/residential access • Bridge length: 2,178 ft. • Earthwork: 1.9 mcy (0.8 mcy cut, 1.1 mcy fill)	No	Yes	No	Yes	No	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 29 ac. • Stream crossings: 4 • Floodplain impacts: 1.0 ac. • Notable wildlife habitat: 2.2 ac. • Undeveloped habitat: 255 ac. • Prime farmland: 57.4 ac. • Residential displacements: 15
Alternative 1-4	• Does not satisfy design criteria • Length: 1.5 mi. of new alignment, 8.7 mi. of widening Route 1A and Route 46 to four lanes with center median barrier, collector/distributor lanes along Route 1A • Local road created: 6.7 mi. of service roads for commercial/residential access • Bridge length: 1,571 ft. • Earthwork: 1.9 mcy (0.8 mcy cut, 1.1 mcy fill)	No	Yes	No	Yes	No	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 32 ac. • Stream crossings: 4 • Floodplain impacts: 1.0 ac. • Notable wildlife habitat: 1.8 ac. • Undeveloped habitat: 0 ac. • Prime farmland: 0 ac. • Residential displacements: 21

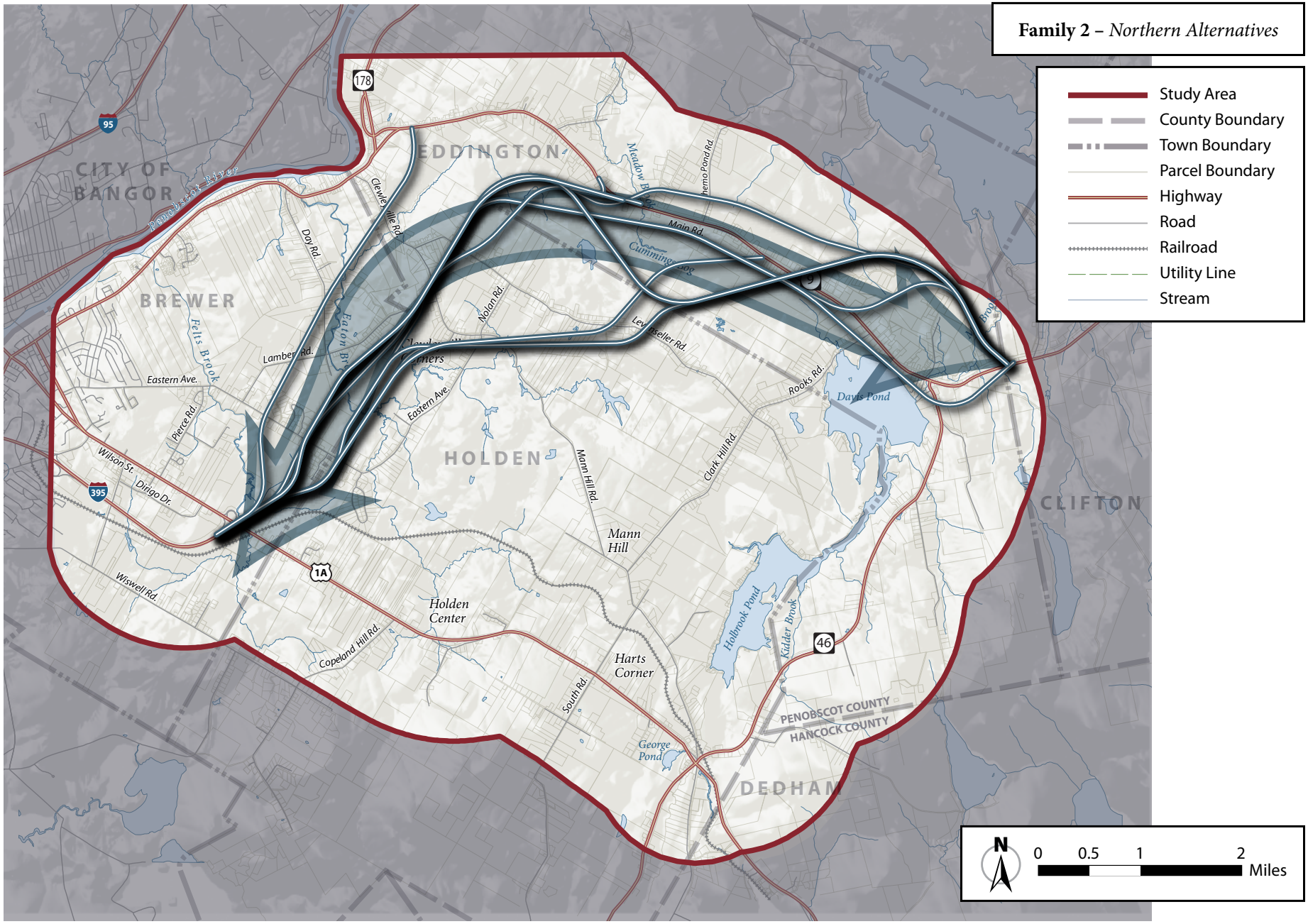
Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results and Impacts
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 1-4B	• Does not satisfy design criteria • Length: 4.1 mi. of widening Route 1A to four lanes, 6.1 mi. of new alignment using Alternative 4B • Bridge length: 1,845 ft. • Earthwork: 6.0 mcy (3.0 mcy cut, 3.0 mcy fill) • Substantial impact to Camp Roosevelt Boy Scout Reservation	No	Yes	No	Yes	No	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 31 ac. • Stream crossings: 8 • Floodplain impacts: 1.1 ac. • Notable wildlife habitat: 0 ac. • Undeveloped habitat: 0 ac. • Prime farmland: 0 ac. • Residential displacements: 9
Alternative 1-4B-1	• Does not satisfy design criteria • Length: 4.1 mi. of widening Route 1A to four lanes (using Alternative 1-1), 6.1 mi. of new alignment using Alternative 4B • Local road created: 4.9 mi. of service roads for commercial/residential access • Bridge length: 2,572 ft. • Earthwork: 5.5 mcy (3.0 mcy cut, 2.5 mcy fill) • Substantial impact to Camp Roosevelt Boy Scout Reservation	No	Yes	No	Yes	No	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 41 ac. • Stream crossings: 7 • Floodplain impacts: 0.8 ac. • Notable wildlife habitat: 2.3 ac. • Undeveloped habitat: 675 ac. • Prime farmland: 42.2 ac. • Residential displacements: 13
Alternative 1-4B-2	• Does not satisfy design criteria • Length: 4.1 mi. of widening Route 1A to four lanes (using Alternative 1-2), 6.1 mi. of new alignment using Alternative 4B • Local road created: 6.8 mi. of service roads for commercial/residential access • Bridge length: 3,097 ft. • Earthwork: 5.5 mcy (3.0 mcy cut, 2.5 mcy fill) • Substantial impact to Camp Roosevelt Boy Scout Reservation	No	Yes	No	Yes	No	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 42 ac. • Stream crossings: 7 • Floodplain impacts: 0.8 ac. • Notable wildlife habitat: 2.3 ac. • Undeveloped habitat: 747ac. • Prime farmland: 41.1 ac. • Residential displacements: 11

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results and Impacts
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 1-4B-3	• Does not satisfy design criteria • Length: 4.1 mi. of widening Route 1A to four lanes (using Alternative 1-3), 6.1 mi. of new alignment using Alternative 4B • Local road created: 4.9 mi. of service roads for commercial/residential access • Bridge length: 4,065 ft. • Earthwork: 5.5 mcy (3.0 mcy cut, 2.5 mcy fill) • Substantial impact to Camp Roosevelt Boy Scout Reservation	No	Yes	No	Yes	No	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 41 ac. • Stream crossings: 7 • Floodplain impacts: 0.8 ac. • Notable wildlife habitat: 2.3 ac. • Undeveloped habitat: 737ac. • Prime farmland: 39.0 ac. • Residential displacements: 8
Alternative 1-4B-4	• Does not satisfy design criteria • Length: 4.1 mi. of widening Route 1A to four lanes (using Alternative 1-4), 6.1 mi. of new alignment using Alternative 4B • Local road created: 8.2 mi. of service roads for commercial/residential access • Bridge length: 3,458 ft. • Earthwork: 5.5 mcy (3.0 mcy cut, 2.5 mcy fill) • Substantial impact to Camp Roosevelt Boy Scout Reservation	No	Yes	No	Yes	No	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 44 ac. • Stream crossings: 7 • Floodplain impacts: 0.8 ac. • Notable wildlife habitat: 1.9 ac. • Undeveloped habitat: 647 ac. • Prime farmland: 23.3 ac. • Residential displacements: 17

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.


Family 2 – Northern Alternatives
Study Area
County Boundary
Town Boundary
Parcel Boundary
Highway
Road
Railroad
Utility Line
Stream
CITY OF BANGOR
Penobscot River
EDDINGTON
BREWER
HOLDEN
CLIFTON
DEDHAM
Felts Brook
Eaton Brook
Meadow Brook
Cummings Bog
Davis Pond
Holbrook Pond
Kidder Brook
George Pond
Mann Hill
Holden Center
Harts Corner
Main Rd.
Nolan Rd.
Lamber Rd.
Eastern Ave.
Pierce Rd.
Wilson St.
Dirigo Dr.
Wiswell Rd.
Copeland Hill Rd.
Doy Rd.
Clewleyville Rd.
Mann Hill Rd.
Clark Hill Rd.
Rooks Rd.
South Rd.
PENOBSCOT COUNTY
HANCOCK COUNTY
178
95
395
1A
46
N
0
0.5
1
2
Miles

Family 2 – Northern Alternatives

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 2A	• Satisfies design criteria • Length: 4.6 mi. of new alignment, 4.5 mi. of Route 9 without additional improvement • Bridge length: 5,200 ft. • Earthwork: 1.0 mcy (0.2 mcy cut, 0.8 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 26 ac. • Stream crossings: 3 (2 with anadromous fish) • Floodplain impacts: 11 ac. • Notable wildlife habitat: 4.4 ac. • Undeveloped habitat: 248 ac. • Prime farmland: 30.0 ac. • Residential displacements: 8
Alternative 2B	• Satisfies design criteria • Length: 5.8 mi. of new alignment, 4.2 mi. of Route 9 without additional improvement • Bridge length: 4,354 ft. • Earthwork: 1.8 mcy (0.9 mcy cut, 0.9 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 28 ac. • Stream crossings: 6 (2 with anadromous fish) • Floodplain impacts: 11 ac. • Notable wildlife habitat: 4.4 ac. • Undeveloped habitat: 647 ac. • Prime farmland: 23.3 ac. • Residential displacements: 2
Alternative 2B-1	• Satisfies design criteria • Length: 10.2 mi. of new alignment • Bridge length: 2,232 ft. • Earthwork: 3.5 mcy (1.7 mcy cut, 1.8 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 35 ac. • Stream crossings: 5 (2 with anadromous fish) • Floodplain impacts: 11 ac. • Notable wildlife habitat: 0 • Undeveloped habitat: 1,362 ac. • Prime farmland: 37.0 ac. • Residential displacements: 9
Alternative 2B-2	• Satisfies design criteria • Length: 6.1 mi. of new alignment, 4.2 mi. of Route 9 without additional improvements • Bridge length: 2,232 ft. • Earthwork: 2.2 mcy (1.2 mcy cut, 1.0 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Retained for detailed study** • Wetlands impacts: 34 ac. • Stream crossings: 3 (2 with anadromous fish) • Floodplain impacts: 15 ac. • Notable wildlife habitat: 11.0 • Undeveloped habitat: 784 ac. • Prime farmland: 20.0 ac. • Residential displacements: 8

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 2B-2 -K	• Satisfies design criteria • Length: 5.8 mi. of new alignment, 4.2 mi. of Route 9 without additional improvements, 2.1 mi. of new alignment • Bridge length: 2,232 ft. • Earthwork: 3.3 mcy (1.9 mcy cut, 1.4 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 45 ac. • Stream crossings: 4 (2 with anadromous fish) • Floodplain impacts: 15 ac. • Notable wildlife habitat: 13.0 • Undeveloped habitat: 1,038 ac. • Prime farmland: 24.0 ac. • Residential displacements: 8
Alternative 2BEF	• Satisfies design criteria • Length: 10.2 mi. of new alignment • Bridge length: 3,820 ft. • Earthwork: 3.5 mcy (1.7 mcy cut, 1.8 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 66 ac. • Stream crossings: 11 (2 with anadromous fish) • Floodplain impacts: 1.6 ac. • Notable wildlife habitat: 0 • Undeveloped habitat: 572 ac. • Prime farmland: 37.8 ac. • Residential displacements: 7
Alternative 2BE3K	• Satisfies design criteria • Length: 10.2 mi. of new alignment • Bridge length: 3,021 ft. • Earthwork: 3.2 mcy (1.6 mcy cut, 1.6 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 54 ac. • Stream crossings: 11 (1 with anadromous fish) • Floodplain impacts: 15 ac. • Notable wildlife habitat: 0 • Undeveloped habitat: 744 ac. • Prime farmland: 39.3 ac. • Residential displacements: 8
Alternative 2C	• Satisfies design criteria • Length: 9.4 mi. of new alignment, uses 4.2 mi. of Route 9 without additional improvement • Bridge length: 6,723 ft. • Earthwork: 2.8 mcy (1.4 mcy cut, 1.4 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 30 ac. • Stream crossings: 5 (2 with anadromous fish) • Notable wildlife habitat: 0 • Undeveloped habitat: 491 ac. • Prime farmland: 30.7 ac. • Residential displacements: 3 • Floodplain impacts: 15 ac.

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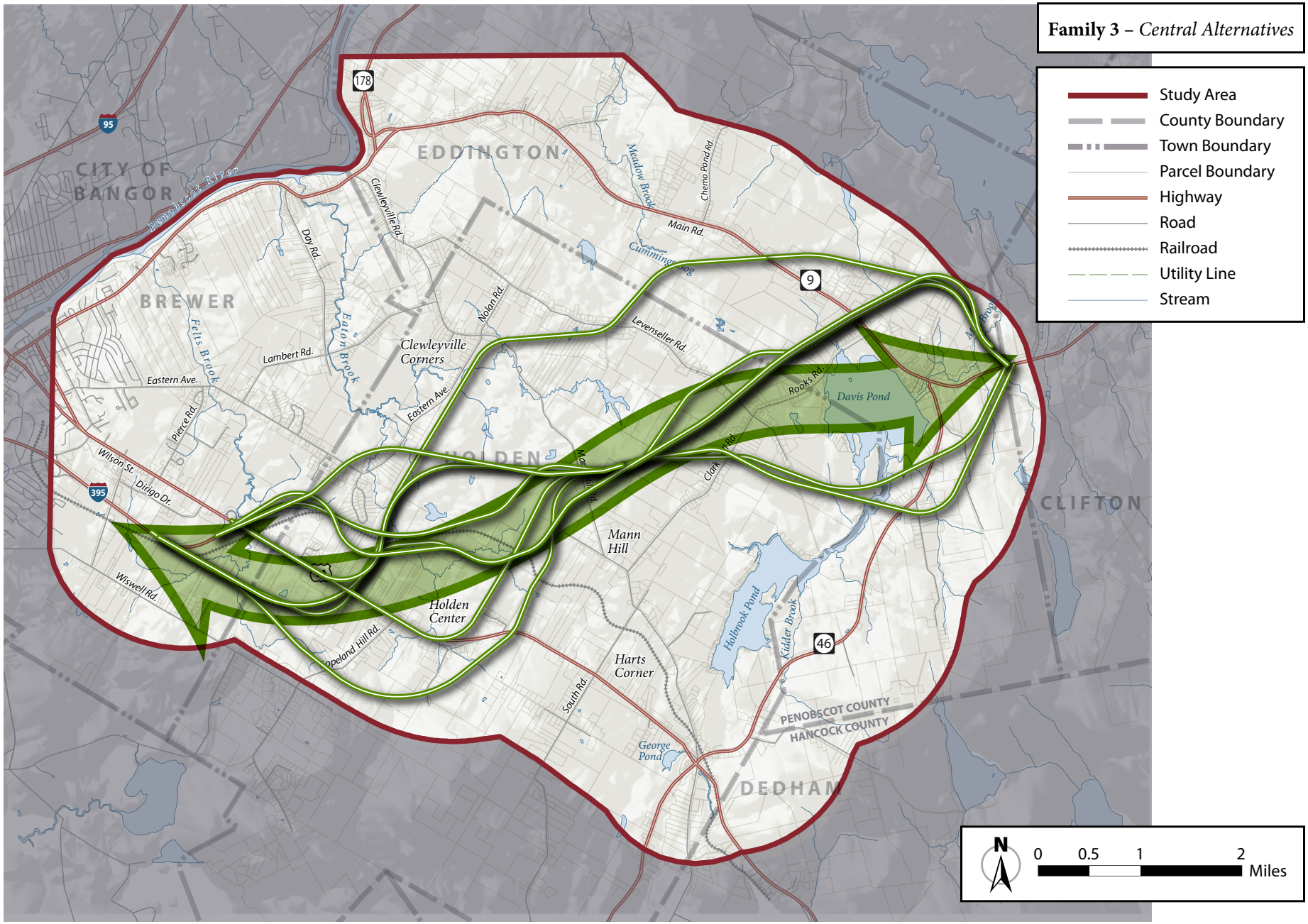
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 2C-1	• Satisfies design criteria • Length: 9.3 mi. of new alignment • Bridge length: 2,469 ft. • Earthwork: 3.8 mcy (1.9 mcy cut, 1.9 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** Wetlands impacts: 35 ac. • Stream crossings: 5 (1 with anadromous fish) • Notable wildlife habitat: 0 • Undeveloped habitat: 893 ac. • Prime farmland: 47.6 ac. • Floodplain impacts: 12 ac. • Residential displacements: 8
Alternative 2C-2	• Satisfies design criteria • Length: 9.2 mi. of new alignment • Bridge length: 2,469 ft. • Earthwork: 3.8 mcy (1.9 mcy cut, 1. mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 35 ac. • Stream crossings: 5 (1 with anadromous fish) • Floodplain impacts: 14 ac. • Notable wildlife habitat: 0 • Undeveloped habitat: 839 ac. • Prime farmland: 45.8 ac. • Residential displacements: 8
Alternative 2C-1/2B-1	• Satisfies design criteria • Length: 10.7 mi. of new alignment • Bridge length: 2,232 ft. • Earthwork: 3.8 mcy (1.9 mcy cut, 1.9 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 38 ac. • Stream crossings: 9 (1 with anadromous fish) • Floodplain impacts: 11 ac. • Notable wildlife habitat: 0 • Undeveloped habitat: 1,251 ac. • Prime farmland: 43.0 ac. • Residential displacements: 10
Alternative 2D	• Satisfies design criteria • Length: 10.2 mi. of new alignment • Bridge length: 6,192 ft. • Earthwork: 6.2 mcy (3.1 mcy cut, 3.1 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 66 ac. • Stream crossings: 11 (1 with anadromous fish) • Floodplain impacts: 13 ac. • Notable wildlife habitat: 0 • Undeveloped habitat: 1,255 ac. • Prime farmland: 35.6 ac. • Residential displacements: 2

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.


Family 3 – Central Alternatives
Study Area
County Boundary
Town Boundary
Parcel Boundary
Highway
Road
Railroad
Utility Line
Stream
CITY OF BANGOR
BREWER
EDDINGTON
CLIFTON
DEDHAM
Penobscot River
Clewleyville Corners
Holden Center
Mann Hill
Harts Corner
Davis Pond
Holbrook Pond
George Pond
Kidder Brook
Meadow Brook
Chemo Pond Rd.
Main Rd.
Cunningham Rd.
Levenseller Rd.
Rooks Rd.
Clewleyville Rd.
Day Rd.
Nolan Rd.
Eaton Brook
Felts Brook
Lambert Rd.
Eastern Ave.
Pierce Rd.
Wilson St.
Dirigo Dr.
Wiswell Rd.
Coppeland Hill Rd.
South Rd.
Clark Rd.
PENOBSCOT COUNTY
HANCOCK COUNTY
178
95
9
46
395
N
0
0.5
1
2
Miles

Family 3 – Central Alternatives

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3AG	• Satisfies design criteria • Length: 9.3 mi. of new alignment • Bridge length: 7,495 ft. • Earthwork: 5.3 mcy (2.5 mcy cut, 2.8 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 76 ac. • Stream crossings: 10 (2 with anadromous fish) • Floodplain impacts: 14 ac. • Notable wildlife habitat: 8.6 ac. • Undeveloped habitat: 942 ac. • Prime farmland: 8.7 ac. • Residential displacements: 8
Alternative 3AH	• Satisfies design criteria • Length: 8.8 mi. of new alignment • Bridge length: 7,037 ft. • Earthwork: 4.3 mcy (2.0 mcy cut, 2.3 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 96 ac. • Stream crossings: 11 (2 with anadromous fish) • Floodplain impacts: 14 ac. • Notable wildlife habitat: 7.3 ac. • Undeveloped habitat: 848 ac. • Prime farmland: 12.8 ac. • Residential displacements: 5
Alternative 3AI	• Satisfies design criteria • Length: 7.0 mi. of new alignment, uses 2.7 mi. of Route 9 without additional improvement • Bridge length: 4,645 ft. • Earthwork: 3.1 mcy (1.4 mcy cut, 1.7 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 43 ac. • Stream crossings: 5 (2 with anadromous fish) • Floodplain impacts: 10 ac. • Notable wildlife habitat: 2.9 ac. • Undeveloped habitat: 762 ac. • Prime farmland: 10.5 ac. • Residential displacements: 4

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Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3AJ	• Satisfies design criteria • Length: 7.1 mi. of new alignment, uses 1.7 mi. of Route 9 without additional improvement • Bridge length: 4,766 ft. • Earthwork: 3.3 mcy (1.5 mcy cut, 1.8 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 36 ac. • Stream crossings: 5 (2 with anadromous fish) • Floodplain impacts: 11 ac. • Notable wildlife habitat: 4.9 ac. • Undeveloped habitat: 721 ac. • Prime farmland: 10.5 ac. • Residential displacements: 6
Alternative 3AIK	• Satisfies design criteria • Length: 9.2 mi. of new alignment • Bridge length: 4,814 ft. • Earthwork: 3.9 mcy (1.8 mcy cut, 2.1 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 50 ac. • Stream crossings: 7 (2 with anadromous fish) • Floodplain impacts: 10 ac. • Notable wildlife habitat: 2.9 ac. • Undeveloped habitat: 972 ac. • Prime farmland: 20.7 ac. • Residential displacements: 5
Alternative 3AJK	• Satisfies design criteria • Length: 9.3 mi. of new alignment • Bridge length: 4,935 ft. • Earthwork: 4.1 mcy (1.9 mcy cut, 2.2 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 44 ac. • Stream crossings: 7 (2 with anadromous fish) • Floodplain impacts: 11 ac. • Notable wildlife habitat: 4.9 ac. • Undeveloped habitat: 932 ac. • Prime farmland: 20.7 ac. • Residential displacements: 7
Alternative 3BG	• Satisfies design criteria • Length: 9.3 mi. of new alignment • Bridge length: 7,185 ft. • Earthwork: 4.7 mcy (2.2 mcy cut, 2.5 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 101 ac. • Stream crossings: 11 (1 with anadromous fish) • Floodplain impacts: 16 ac. • Notable wildlife habitat: 14 ac. • Undeveloped habitat: 890 ac. • Prime farmland: 9.5 ac. • Residential displacements: 5

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Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3BH	• Satisfies design criteria • Length: 8.9 mi. of new alignment • Bridge length: 6,726 ft. • Earthwork: 3.7 mcy (1.7 mcy cut, 2.0 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 121 ac. • Stream crossings: 12 (1 with anadromous fish) • Floodplain impacts: 16 ac. • Notable wildlife habitat: 13 ac. • Undeveloped habitat: 772 ac. • Prime farmland: 8.0 ac. • Residential displacements: 2
Alternative 3BI	• Satisfies design criteria • Length: 7.1 mi. of new alignment, uses 2.7 mi. of Route 9 without additional improvement • Bridge length: 4,334 ft. • Earthwork: 2.5 mcy (1.1 mcy cut, 1.4 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 68 ac. • Stream crossings: 6 (1 with anadromous fish) • Floodplain impacts: 12 ac. • Notable wildlife habitat: 8.7 ac. • Undeveloped habitat: 708 ac. • Prime farmland: 11.3 ac. • Residential displacements: 5
Alternative 3BJ	• Satisfies design criteria • Length: 7.2 mi. of new alignment, uses 1.7 mi. of Route 9 without additional improvement • Bridge length: 4,455 ft. • Earthwork: 2.7 mcy (1.2 mcy cut, 1.5 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 62 ac. • Stream crossings: 6 (1 with anadromous fish) • Floodplain impacts: 13 ac. • Notable wildlife habitat: 11 ac. • Undeveloped habitat: 668 ac. • Prime farmland: 11.3 ac.
Alternative 3BIK	• Satisfies design criteria • Length: 9.3 mi. of new alignment • Bridge length: 4,503 ft. • Earthwork: 3.3 mcy (1.5 mcy cut, 1.8 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 76 ac. • Stream crossings: 8 (1 with anadromous fish) • Floodplain impacts: 12 ac. • Notable wildlife habitat: 8.7 ac. • Undeveloped habitat: 923 ac. • Prime farmland: 22.0 ac. • Residential displacements: 2

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Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3BJK	• Satisfies design criteria • Length: 9.4 mi. of new alignment • Bridge length: 4,624 ft. • Earthwork: 3.5 mcy (1.6 mcy cut, 1.9 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 69 ac. • Stream crossings: 8 (1 with anadromous fish) • Floodplain impacts: 13 ac. • Notable wildlife habitat: 11 ac. • Undeveloped habitat: 881 ac. • Prime farmland: 21.5 ac. • Residential displacements: 4
Alternative 3CG	• Satisfies design criteria • Length: 9.6 mi. of new alignment • Bridge length: 6,262 ft. • Earthwork: 5.3 mcy (2.5 mcy cut, 2.8 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 77 ac. • Stream crossings: 10 (2 with anadromous fish) • Floodplain impacts: 12 ac. • Notable wildlife habitat: 8.7 ac. • Undeveloped habitat: 1,017 ac. • Prime farmland: 12.2 ac. • Residential displacements: 9
Alternative 3CH	• Satisfies design criteria • Length: 9.2 mi. of new alignment • Bridge length: 5,804 ft. • Earthwork: 4.2 mcy (1.9 mcy cut, 2.3 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 97 ac. • Stream crossings: 11 (2 with anadromous fish) • Floodplain impacts: 12 ac. • Notable wildlife habitat: 7.4 ac. • Undeveloped habitat: 897 ac. • Prime farmland: 16.3 ac. • Residential displacements: 6
Alternative 3CI	• Satisfies design criteria • Length: 7.4 mi. of new alignment, uses 2.7 mi. of Route 9 without additional improvement • Bridge length: 3,411 ft. • Earthwork: 3.1 mcy (1.4 mcy cut, 1.7 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 44 ac. • Stream crossings: 5 • Floodplain impacts: 8.4 ac. • Notable wildlife habitat: 3.0 ac. • Undeveloped habitat: 915 ac. • Prime farmland: 14.0 ac. • Residential displacements: 5

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Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3CJ	• Satisfies design criteria • Length: 7.5 mi. of new alignment, uses 1.7 mi. of Route 9 without additional improvement • Bridge length: 3,532 ft. • Earthwork: 3.2 mcy (1. 4 mcy cut, 1.8 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 38 ac. • Stream crossings: 5 • Floodplain impacts: 9.0 ac. • Notable wildlife habitat: 5.0 ac. • Undeveloped habitat: 875 ac. • Prime farmland: 14.0 ac. • Residential displacements: 7
Alternative 3CIK	• Satisfies design criteria • Length: 9.6 mi. of new alignment • Bridge length: 3,581 ft. • Earthwork: 3.8 mcy (1.7 mcy cut, 2.1 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 52 ac. • Stream crossings: 7 • Floodplain impacts: 8.4 ac. • Notable wildlife habitat: 3.0 ac. • Undeveloped habitat: 1,127 ac. • Prime farmland: 24.2 ac. • Residential displacements: 6
Alternative 3CJK	• Satisfies design criteria • Length: 9.7 mi. of new alignment • Bridge length: 3,702 ft. • Earthwork: 4.0 mcy (1.8 mcy cut, 2.2 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 45 ac. • Stream crossings: 7 • Floodplain impacts: 9.0 ac. • Notable wildlife habitat: 5.0 ac. • Undeveloped habitat: 1,087 ac. • Prime farmland: 24.2 ac. • Residential displacements: 8
Alternative 3DG	• Satisfies design criteria • Length: 10.0 mi. of new alignment • Bridge length: 5,763 ft. • Earthwork: 5.4 mcy (2.6 mcy cut, 2.8 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 79 ac. • Stream crossings: 10 • Floodplain impacts: 7.9 ac. • Notable wildlife habitat: 19 ac. • Undeveloped habitat: 837ac. • Prime farmland: 23.1 ac. • Residential displacements: 11

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Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3DH	• Satisfies design criteria • Length: 9.6 mi. of new alignment • Bridge length: 5,305 ft. • Earthwork: 4.3 mcy (2.0 mcy cut, 2.3 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 98 ac. • Stream crossings: 11 • Floodplain impacts: 7.6 ac. • Notable wildlife habitat: 7.3 ac. • Undeveloped habitat: 719 ac. • Prime farmland: 27.1 ac. • Residential displacements: 8
Alternative 3DI	• Satisfies design criteria • Length: 7.8 mi. of new alignment, uses 2.7 mi. of Route 9 without additional improvement • Bridge length: 2,913 ft. • Earthwork: 3.2 mcy (1.4 mcy cut, 1.8 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 46 ac. • Stream crossings: 5 (2 with anadromous fish) • Floodplain impacts: 3.9 ac. • Notable wildlife habitat: 13 ac. • Undeveloped habitat: 658 ac. • Prime farmland: 24.9 ac. • Residential displacements: 7
Alternative 3DJ	• Satisfies design criteria • Length: 7.9 mi. of new alignment, uses 1.7 mi. of Route 9 without additional improvement • Bridge length: 3,034 ft. • Earthwork: 3.3 mcy (1.5 mcy cut, 1.8 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 39 ac. • Stream crossings: 5 • Floodplain impacts: 4.5 ac. • Notable wildlife habitat: 15 ac. • Undeveloped habitat: 616 ac. • Prime farmland: 24.9 ac. • Residential displacements: 9
Alternative 3DIK	• Satisfies design criteria • Length: 10.0 mi. of new alignment • Bridge length: 3,082 ft. • Earthwork: 3.9 mcy (1.8 mcy cut, 2.1 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 53 ac. • Stream crossings: 7 • Floodplain impacts: 3.9 ac. • Notable wildlife habitat: 13 ac. • Undeveloped habitat: 868 ac. • Prime farmland: 35.0 ac. • Residential displacements: 8

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3DJK	• Satisfies design criteria • Length: 10.1 mi. of new alignment • Bridge length: 3,203 ft. • Earthwork: 4.1 mcy (1.9 mcy cut, 2.2 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 46 ac. • Stream crossings: 7 • Floodplain impacts: 4.5 ac. • Notable wildlife habitat: 15 ac. • Undeveloped habitat: 829 ac. • Prime farmland: 35.0 ac. • Residential displacements: 10
Alternative 3EG	• Satisfies design criteria • Length: 10.4 mi. of new alignment • Bridge length: 6,630 ft. • Earthwork: 5.5 mcy (2.6 mcy cut, 2.9 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 73 ac. • Stream crossings: 10 • Floodplain impacts: 11 ac. • Notable wildlife habitat: 8.9 ac. • Undeveloped habitat: 1,280 ac. • Prime farmland: 8.6 ac. • Residential displacements: 5
Alternative 3EH	• Satisfies design criteria • Length: 10.0 mi. of new alignment • Bridge length: 6,171 ft. • Earthwork: 4.5 mcy (2.1 mcy cut, 2.4 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 92 ac. • Stream crossings: 11 • Floodplain impacts: 11 ac. • Undeveloped habitat: 1,163 ac. • Prime farmland: 12.6 ac. • Residential displacements: 2 • Notable wildlife habitat: 7.6 ac.
Alternative 3EI	• Satisfies design criteria • Length: 8.2 mi. of new alignment, uses 2.7 mi. of Route 9 without additional improvement • Bridge length: 3,779 ft. • Earthwork: 3.3 mcy (1.5 mcy cut, 1.8 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 40 ac. • Stream crossings: 5 • Floodplain impacts: 7.4 ac. • Notable wildlife habitat: 3.2 ac. • Undeveloped habitat: 1,099 ac. • Prime farmland: 10.4 ac. • Residential displacements: 1

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Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3EJ	• Satisfies design criteria • Length: 8.3 mi. of new alignment, uses 1.7 mi. of Route 9 without additional improvement • Bridge length: 3,900 ft. • Earthwork: 3.5 mcy (1.6 mcy cut, 1.9 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 40 ac. • Stream crossings: 5 • Floodplain impacts: 8.0 ac. • Notable wildlife habitat: 5.2 ac. • Undeveloped habitat: 1,059 ac. • Prime farmland: 10.4 ac. • Residential displacements: 3
Alternative 3EIK	• Satisfies design criteria • Length: 10.4 mi. of new alignment • Bridge length: 3,948 ft. • Earthwork: 4.1 mcy (1.9 mcy cut, 2.2 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 47 ac. • Stream crossings: 7 • Floodplain impacts: 7.4 ac. • Notable wildlife habitat: 3.2 ac. • Undeveloped habitat: 1,312 ac. • Prime farmland: 20.5 ac. • Residential displacements: 2
Alternative 3EIK-1	• Satisfies design criteria • Length: 10.2 mi. of new alignment • Bridge length: 2,797 ft. • Earthwork: 4.4 mcy (2.2 mcy cut, 2.2 mcy fill) • Developed as a modification of Alternative 3EIK. Shifts Alternative 3EIK southeast to further avoid residences on Eastern Avenue	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 48 ac. • Stream crossings: 8 • Floodplain impacts: 16 ac. • Notable wildlife habitat: 14 ac. • Undeveloped habitat: 1,395 ac. • Prime farmland: 22.7 ac. • Residential displacements: 4
Alternative 3EIK-2	• Satisfies design criteria • Length: 10.6 mi. of new alignment • Bridge length: 1,948 ft. • Earthwork: 4.2 mcy (2.1 mcy cut, 2.1 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 42 ac. • Stream crossings: 6 • Floodplain impacts: 7.5 ac. • Notable wildlife habitat: 0.7 ac. • Undeveloped habitat: 1,437 ac. • Prime farmland: 11 ac. • Residential displacements: 3

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Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3A-3EIK-1	• Satisfies design criteria • Length: 9.2 mi. of new alignment • Bridge length: 1,774 ft. • Earthwork: 4.2 mcy (2.1 mcy cut, 2.1 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 50 ac. • Stream crossings: 8 • Floodplain impacts: 23 ac. • Notable wildlife habitat: 13 ac. • Undeveloped habitat: 1,107 ac. • Prime farmland: 22.2 ac. • Residential displacements: 8
Alternative 3E-2C	• Satisfies design criteria • Length: 7.8 mi. of new alignment, uses 2.7 mi. of Route 9 without additional improvement • Bridge length: 3,607 ft. • Earthwork: 2.4 mcy (1.2 mcy cut, 1.2 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 22 ac. • Stream crossings: 9 • Floodplain impacts: 6.0 ac. • Notable wildlife habitat: 0.1 ac. • Undeveloped habitat: 757 ac. • Prime farmland: 124.7 ac. • Residential displacements: 4
Alternative 3E-2C-2E	• Satisfies design criteria • Length: 10.7 mi. of new alignment • Bridge length: 4,440 ft. • Earthwork: 4.4 mcy (2.2 mcy cut, 2.2 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 31 ac. • Stream crossings: 12 • Floodplain impacts: 6.0 ac. • Notable wildlife habitat: 0.1 ac. • Undeveloped habitat: 1,104 ac. • Prime farmland: 133.4 ac. • Residential displacements: 6
Alternative 3EJK	• Satisfies design criteria • Length: 10.5 mi. of new alignment • Bridge length: 4,070 ft. • Earthwork: 4.3 mcy (2.0 mcy cut, 2.3 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 40 ac. • Stream crossings: 7 • Floodplain impacts: 8.0. ac. • Notable wildlife habitat: 5.2 ac. • Undeveloped habitat: 1,272 ac. • Prime farmland: 20.5 ac. • Residential displacements: 4

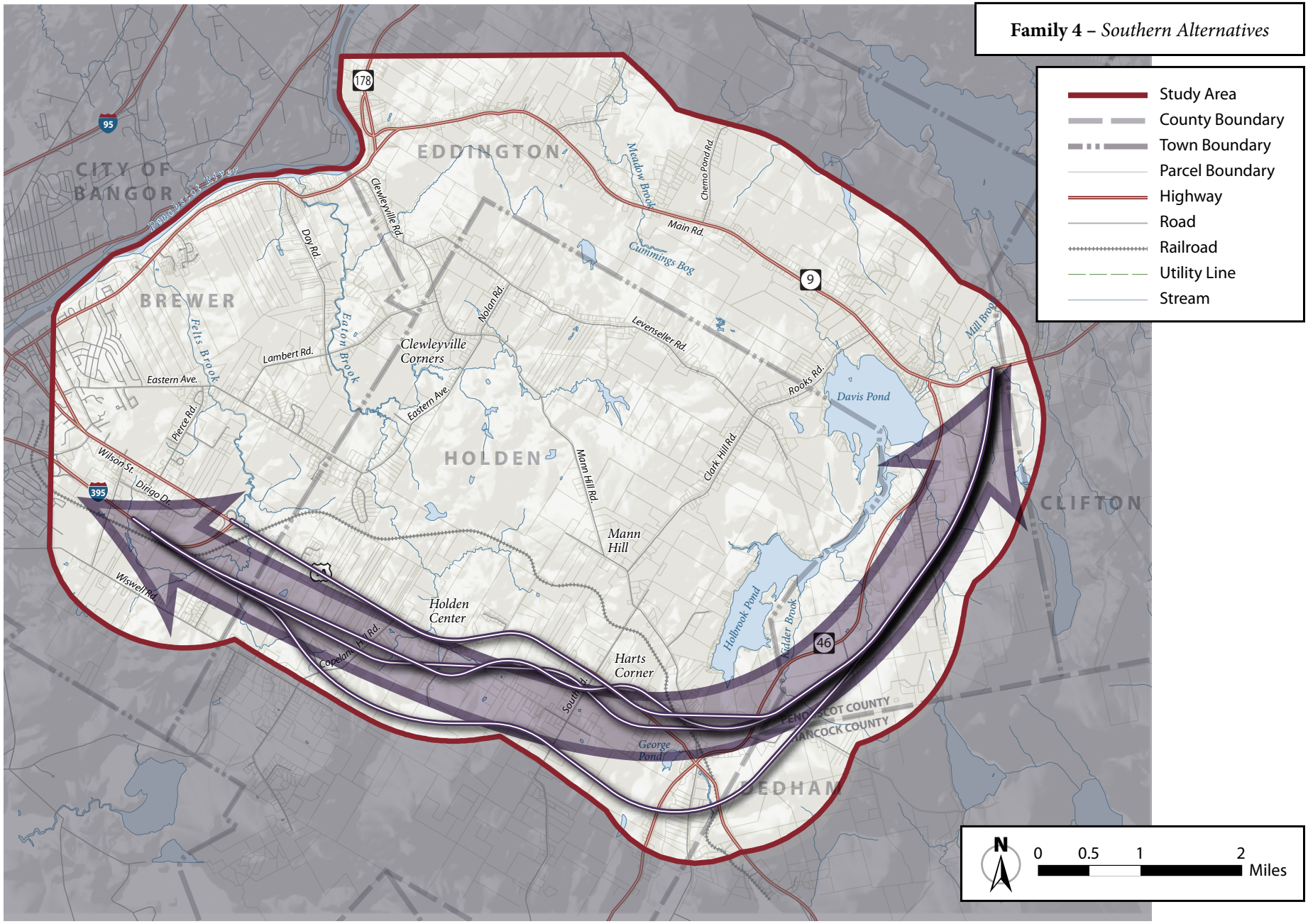
Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3FG	• Satisfies design criteria • Length: 11.4 mi. of new alignment • Bridge length: 6,742 ft. • Earthwork: 7.1 mcy (3.5 mcy cut, 3.6 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 70 ac. • Stream crossings: 11 • Floodplain impacts: 7.3 ac. • Notable wildlife habitat: 13 ac. • Undeveloped habitat: 1,262 ac. • Prime farmland: 26.4 ac. • Residential displacements: 8
Alternative 3FH	• Satisfies design criteria • Length: 10.9 mi. of new alignment • Bridge length: 6,283 ft. • Earthwork: 6.1 mcy (2.9 mcy cut, 3.2 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 89 ac. • Stream crossings: 12 • Floodplain impacts: 7.1 ac. • Notable wildlife habitat: 12 ac. • Undeveloped habitat: 1,113 ac. • Prime farmland: 24.8 ac. • Residential displacements: 5
Alternative 3FI	• Satisfies design criteria • Length: 9.1 mi. of new alignment, uses 2.7 mi. of Route 9 without additional improvement • Bridge length: 3,891 ft. • Earthwork: 5.0 mcy (2.4 mcy cut, 2.6 mcy fill)	Yes	Yes	in the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 36 ac. • Stream crossings: 6 • Floodplain impacts: 3 ac. • Notable wildlife habitat: 7.5 ac. • Undeveloped habitat: 1,081 ac. • Prime farmland: 28.2 ac. • Residential displacements: 4
Alternative 3FJ	• Satisfies design criteria • Length: 9.3 mi. of new alignment, uses 1.7 mi. of Route 9 without additional improvement • Bridge length: 4,012 ft. • Earthwork: 5.1 mcy (2.5 mcy cut, 2.6 mcy fill)	Yes	Yes	in the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 30 ac. • Stream crossings: 6 • Floodplain impacts: 4.0 ac. • Notable wildlife habitat: 9.4 ac. • Undeveloped habitat: 1,041 ac. • Prime farmland: 28.2 ac. • Residential displacements: 6

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 3FIK	• Satisfies design criteria • Length: 11.3 mi. of new alignment • Bridge length: 4,060 ft. • Earthwork: 5.7 mcy (2.8 mcy cut, 2.9 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 44 ac. • Stream crossings: 8 • Floodplain impacts: 3.4 ac. • Notable wildlife habitat: 7.5 ac. • Undeveloped habitat: 1,294 ac. • Prime farmland: 38.4 ac. • Residential displacements: 5
Alternative 3FJK	• Satisfies design criteria • Length: 11.4 mi. of new alignment • Bridge length: 4,181 ft. • Earthwork: 5.8 mcy (2.8 mcy cut, 3.0 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 37 ac. • Stream crossings: 8 • Floodplain impacts: 4.0 ac. • Notable wildlife habitat: 9.4 ac. • Undeveloped habitat: 1,253 ac. • Prime farmland: 38.4 ac. • Residential displacements: 17

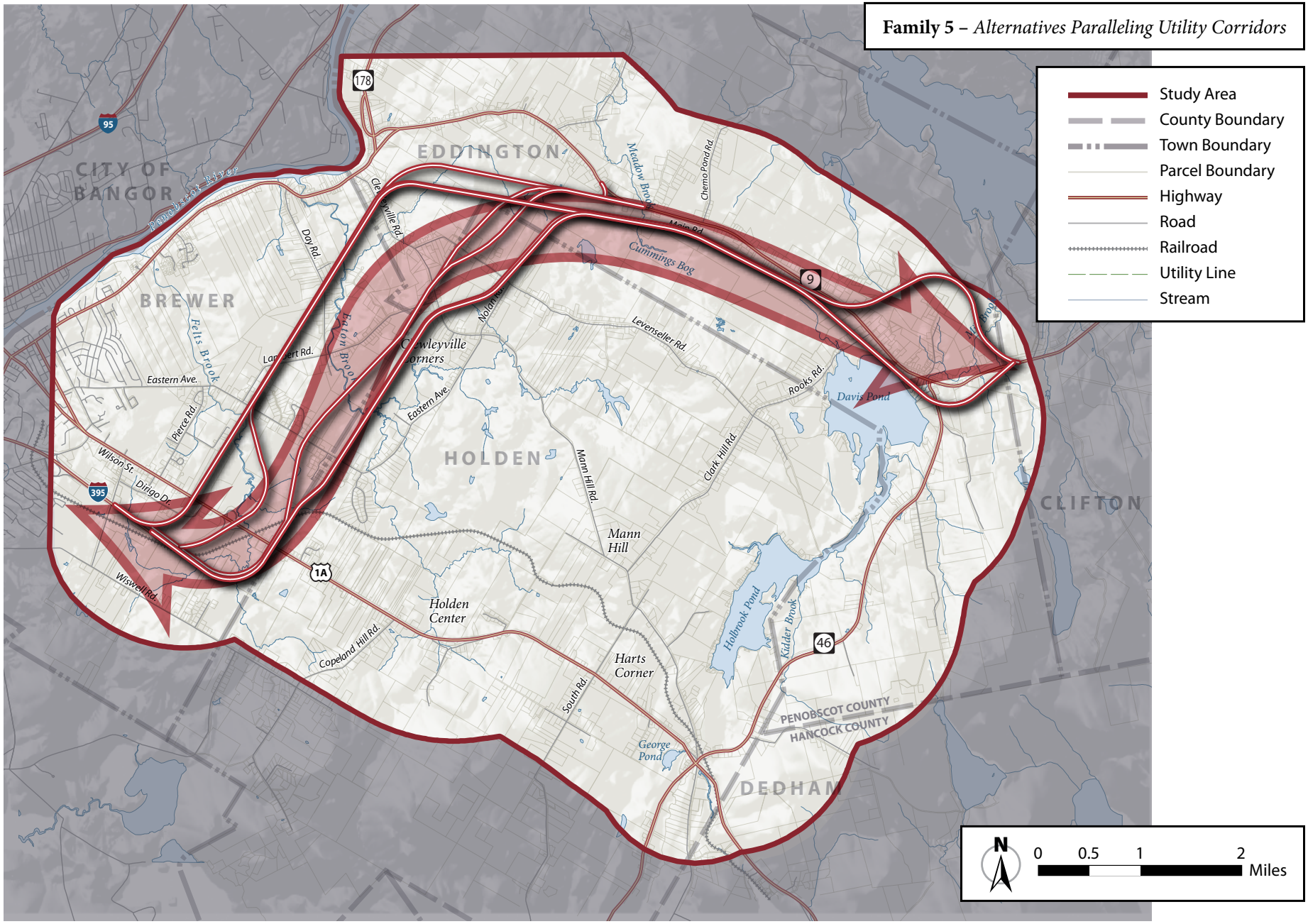
Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.


Family 4 – Southern Alternatives
Study Area
County Boundary
Town Boundary
Parcel Boundary
Highway
Road
Railroad
Utility Line
Stream
CITY OF BANGOR
Penobscot River
BREWER
EDDINGTON
HOLDEN
CLIFTON
BEDHAM
PENOBSCOT COUNTY
HANCOCK COUNTY
178
95
9
46
395
Meadow Brook
Chemo Pond Rd.
Main Rd.
Cummings Bog
Clewleyville Rd.
Doy Rd.
Nolan Rd.
Levenseller Rd.
Mill Brook
Rooks Rd.
Davis Pond
Clewleyville Corners
Lambert Rd.
Eastern Ave.
Felts Brook
Eaton Brook
Pierce Rd.
Wilson St.
Dirigo Dr.
Mann Hill Rd.
Clark Hill Rd.
Mann Hill
Wiswell Rd.
Holden Center
Copeland Hill Rd.
Harts Corner
South St.
Holbrook Pond
Felder Brook
George Pond
N
0
0.5
1
2
Miles

Family 4 – Southern Alternatives

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 4A	• Satisfies design criteria • Length: 10.2 mi. of new alignment • Bridge length: 2,115 ft. • Earthwork: 10.1 mcy (4.9 mcy cut, 5.2 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 40 ac. • Stream crossings: 5 • Floodplain impacts: 1.6 ac. • Notable wildlife habitat: 2.0 ac. • Undeveloped habitat: 795 ac. • Prime farmland: 53.6 ac. • Residential displacements: 17
Alternative 4B	• Satisfies design criteria • Length: 10.9 mi. of new alignment • Bridge length: 3,486 ft. • Earthwork: 15.1 mcy (7.7 mcy cut, 7.4 mcy fill) • Substantial impact to Camp Roosevelt Boy Scout Reservation	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 45 ac. • Stream crossings: 4 • Floodplain impacts: 0.8 ac. • Notable wildlife habitat: 2.4 ac. • Undeveloped habitat: 1,227 ac. • Prime farmland: 24.8 ac. • Residential displacements: 5
Alternative 4C	• Satisfies design criteria • Length: 11.2 mi. of new alignment • Bridge length: 4,138 ft. • Earthwork: 13.5 mcy (6.5 mcy cut, 7.0 mcy fill) • Substantial impact to Camp Roosevelt Boy Scout Reservation	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 52 ac. • Stream crossings: 7 • Floodplain impacts: 0.8 ac. • Notable wildlife habitat: 1.7 ac. • Undeveloped habitat: 1,369 ac. • Prime farmland: 22.1 ac. • Residential displacements: 8
Alternative 4D	• Satisfies design criteria • Length: 11.7 mi. of new alignment • Bridge length: 6,619 ft. • Earthwork: 40.1 mcy (19.7 mcy cut, 20.4 mcy fill) • Substantial impact to Camp Roosevelt Boy Scout Reservation	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 62 ac. • Stream crossings: 10 • Floodplain impacts: 0.4 ac. • Notable wildlife habitat: 10 ac. • Undeveloped habitat: 1,600 ac. • Prime farmland: 22.1 ac. • Residential displacements: 6

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.


Family 5 – Alternatives Paralleling Utility Corridors
Study Area
County Boundary
Town Boundary
Parcel Boundary
Highway
Road
Railroad
Utility Line
Stream
CITY OF BANGOR
Penobscot River
EDDINGTON
BREWER
HOLDEN
CLIFTON
DEDHAM
Meadow Brook
Chemo Pond Rd.
Cummings Bog
Doy Rd.
Felts Brook
Eastern Ave.
Pierce Rd.
Wilson St.
Dirigo Dr.
Wiswell Rd.
Copeland Hill Rd.
Holden Center
Mann Hill
Mann Hill Rd.
Levenseller Rd.
Rooks Rd.
Davis Pond
Clark Hill Rd.
Holbrook Pond
Kidder Brook
Harts Corner
South Rd.
George Pond
PENOBSCOT COUNTY
HANCOCK COUNTY
95
178
9
395
1A
46
N
0
0.5
1
2
Miles

Family 5 – Alternatives Paralleling Utility Corridors

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 5A2EF	• Satisfies design criteria • Length: 11.0 mi. of new alignment • Bridge length: 4,074 ft. • Earthwork: 5.4 mcy (2.6 mcy cut, 2.8 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 80 ac. • Stream crossings: 9 (2 with anadromous fish) • Floodplain impacts: 5.9 ac. • Notable wildlife habitat: 0 ac. • Undeveloped habitat: 607 ac. • Prime farmland: 45.6 ac. • Residential displacements: 5
Alternative 5A2E3K	• Satisfies design criteria • Length: 10.9 mi. of new alignment • Bridge length: 3,286 ft. • Earthwork: 5.1 mcy (2.5 mcy cut, 2.6 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 61 ac. • Stream crossings: 9 (2 with anadromous fish) • Floodplain impacts: 4.5 ac. • Notable wildlife habitat: 25.0 ac. • Undeveloped habitat: 813 ac. • Prime farmland: 49.9 ac. • Residential displacements: 5
Alternative 5A2B-2	• Satisfies design criteria • Length: 7.3 mi. of new alignment, 4.2 mi. of Route 9 without additional improvements • Bridge length: 3,286 ft. • Earthwork: 3.9 mcy (1.8 cut, 2.1 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Retained for detailed study** • Wetlands impacts: 32 ac. • Stream crossings: 3 (2 with anadromous fish) • Floodplain Impacts: 5 ac. • Notable wildlife habitat: 29.0 ac. • Undeveloped habitat: 835 ac. • Prime farmland: 12.0 ac. • Residential Displacements: 15
Alternative 5A2B-3	• Satisfies design criteria • Length: 6.7 mi. of new alignment, 4.2 mi. of Route 9 without additional improvements • Bridge length: 3,341 ft. • Earthwork: 2.6 mcy (0.8 mcy cut, 1.7 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed – other alternatives less environmentally damaging** • Wetlands impacts: 39.5 ac. • Stream crossings: 2 (2 with anadromous fish) • Floodplain impacts: 4.0 ac. • Notable wildlife habitat: 27.0 ac. • Undeveloped habitat: 594 ac. • Prime farmland: 13.0 ac. • Residential displacements: 5

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 5A2B-2-K	• Satisfies design criteria • Length: 7.1 mi. of new alignment, 4.2 mi. of Route 9 without additional improvements, 2.1 mi. of new alignment • Bridge length: 3,286 ft. • Earthwork: 4.1 mcy (1.9 mcy cut, 2.1 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 43 ac. • Stream crossings: 4 (2 with anadromous fish) • Floodplain Impacts: 5 ac. • Notable wildlife habitat: 31.0 ac. • Undeveloped habitat: 1,089 ac. • Prime farmland: 16.0 ac. • Residential displacements: 11
Alternative 5A2E3K-2	• Satisfies design criteria • Length: 12.1 mi. of new alignment • Bridge length: 3,286 ft. • Earthwork: 5.6 mcy (3.1 mcy cut, 2.5 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 57 ac. • Stream crossings: 5 (2 with anadromous fish) • Floodplain Impacts: 3.5 ac. • Notable wildlife habitat: 28.0 ac. • Undeveloped habitat: 1,017 ac. • Prime farmland: 16.0 ac. • Residential displacements: 10
Alternative 5B2B-2	• Satisfies design criteria • Length: 7.0 mi. of new alignment, 4.2 mi. of Route 9 without additional improvements • Bridge length: 3,447 ft. • Earthwork: 2.6 mcy (1.2 mcy cut, 1.4 mcy fill)	Yes	Yes	In the near-term (Year 2035)	Yes	Yes	Yes	• **Retained for detailed study** • Wetlands impacts: 31.0 ac. • Stream crossings: 2 (2 with anadromous fish) • Floodplain impacts: 12.0 ac. • Notable wildlife habitat: 6.0 ac. • Undeveloped habitat: 512 ac. • Prime farmland: 13.0 ac. • Residential displacements: 6
Alternative 5B2EF	• Satisfies design criteria • Length: 11.4 mi. of new alignment • Bridge length: 4,281 ft. • Earthwork: 4.5 mcy (2.3 mcy cut, 2.2 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 80 ac. • Stream crossings: 11 (2 with anadromous fish) • Floodplain impacts: 12 ac. • Notable wildlife habitat: 4.6 ac. • Undeveloped habitat: 318 ac. • Prime farmland: 46.0 ac. • Residential displacements: 10

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

Alternatives	Description	Meets Purpose		Meets Needs			Practicable	Results
		Study Purpose	USACE Purpose	System Linkage	Safety Concerns	Traffic Congestion		
Alternative 5B2E3K	• Satisfies design criteria • Length: 11.3 mi. of new alignment • 3,492 ft. of new bridge construction • Earthwork: 4.1 mcy (2.2 mcy cut, 2.0 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 67 ac. • Stream crossings: 10 (2 with anadromous fish) • Floodplain impacts: 12 ac. • Notable wildlife habitat: 4.6 ac. • Residential displacements: 12 • Undeveloped habitat: 582 ac. • Prime farmland: 49.0 ac.
Alternative 5B2E3K-1	• Satisfies design criteria • Length: 11.2 mi. of new alignment • Bridge length: 2,232 ft. • Earthwork: 5.5 mcy (4.0 mcy cut, 1.4 mcy fill)	Yes	Yes	Yes	Yes	Yes	Yes	• **Dismissed - other alternatives less environmentally damaging** • Wetlands impacts: 61 ac. • Stream crossings: 5 (2 with anadromous fish) • Floodplain impacts: 19 ac. • Undeveloped habitat: 663 ac. • Prime farmland: 23.0 ac. • Residential displacements: 10

Notes: *Direct impacts are based on the conceptual design of a two-lane highway prior to identification of alternatives retained for detailed study and further avoidance and minimization of impacts.*
Undeveloped habitat impacts estimated using habitat blocks with utilities as fragmenting features.

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO ATTENTION OF:

23 JAN 2008 RECEIVED
JAN 25 2008

Regulatory Division
CENAE-R-51

Matt Steele
Office of Environmental Services
Maine Dept. of Transportation
16 State House Station
Augusta, Maine 04333

Dear Mr. Steele:

This letter updates the status of the I-395 connector project according to the Corps Highway Methodology. In previous correspondence and during interagency coordination meetings, we identified the basic project purpose and a range of alternatives to be considered in Phase 1 of project planning and the development of an Environmental Assessment.

Since that time, project planning has continued and FHWA has determined that an Environmental Impact Statement (EIS) is required. This letter serves to document and confirm the completion of Phase I of the methodology and the Corps determination on which highway alternatives will be carried into Phase II and studied in more detail. The following alternatives will be carried forward for further analysis in Phase II as well as in the EIS in order for the Corps to determine the least environmentally damaging practicable alternative (LEDPA): 1, 2B-2, 3A-3EIK-1, 3EIK-2, 5A2E3K, 5B2E3K, and the no build.

Maine DOT has provided valuable new information on vernal pools and unfragmented habitat blocks which will greatly assist us in the alternatives analysis. The Corps also commends Maine DOT on the substantial amount of impact avoidance and minimization work to date in the identification of alternative alignments. However, the above referenced alternatives still represent broad study corridors and much more detailed analyses remain before a LEDPA decision can be made. For example, each of the alignments' connections at Route 9 and I-395 will have to be more fully analyzed to determine if alternative configurations are practicable and less environmentally damaging. Similarly, it remains to be seen whether combining the attributes of two or more alignments reduces the substantial environmental impact of many of the alternatives.

Although the Corps issued one public notice for this project already, we expect to issue a second one to coincide with the publication of the draft EIS. A final determination on the LEDPA will depend in part on comments received in response to our public notices.

This project could have substantial direct impact to wetlands and waterways and indirect impacts to resources like vernal pools and their surrounding habitat. Maine DOT should note that any project that would cause or contribute to significant degradation of waters of the United States may not be permittable. For any such project, it is critical that adequate compensatory mitigation be identified. Maine DOT is well aware of the direction that the Corps is headed in terms of mitigation ratios. We encourage you to continue early planning and coordination in this area. Ideally, preliminary information on mitigation opportunities should be included in the DEIS and our public notice. Although you and your consultants are aware of it, let me remind you that mitigation must be planned in accordance with the Memorandum of Agreement (MOA) between the Environmental Protection Agency and the Department of the Army. Identifying potential mitigation sites and assembling site analysis data, such as monitoring hydrology levels, should continue to be closely coordinated with the Corps and Federal agencies.

If you have any questions concerning this matter, please contact Jay Clement of my staff at 207-623-8367 at our Manchester, Maine Project Office.

Sincerely,

Robert J. DeSista
Regulatory Division

Copies Furnished:
Mark Kern – EPA
Wende Mahaney – USFWS
Marcy Scott – NMFS
Mark Hasselmann - FHWA
Robin Clukey – Maine DEP

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